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Medical Focus - Avian Flu Essentials

March 30, 2006

"It's extremely important to investigate every H5N1 case."

- Dr. Timothy Uyeki, CDC influenza expert

## Dear Colleague:

In the sixteenth letter of the Avian Flu Essentials series, I plan on taking a retrospective look at some of the human avian flu cases and discussing the way this disease has been transmitted. To date, there have been 105 confirmed human deaths attributed to H5N1. The highest incidence of cases has been demonstrated in Vietnam, followed by Indonesia, Thailand and China.

Avian influenza viruses infect birds and can vary in their level of pathogenicity. This disease is not new to the bird population, but the severity has augmented with the new virus H5N1. Birds generally become infected when they encounter a contaminated environment. Sick birds can shed the virus by nasal secretions or bird droppings, the latter of which is more common. According to the Food and Agriculture Organization (FAO), avian influenza viruses can survive up to 6 days in the environment at 98F. These viruses can also remain for longer periods of time at lower temperatures (for 35 days in bird droppings at 40F).

Most humans who have fallen ill or died from avian influenza have had very close contact with diseased birds. Many of those individuals owned backyard flocks, which served as their source of income.

Here are just a few examples on the suspected mode of transmission from poultry to humans. First, a 40-year-old woman in India was hospitalized with avian flu symptoms after burying dead infected chickens with her bare hands. Second, in Indonesia, a case of possible human-to-human transmission was investigated when an aunt and her nephew fell ill. The birds in the neighborhood tested negative for H5N1, but the fertilizer that she had used to garden with had been contaminated. She passed away, but her nephew recovered. This case most likely characterizes limited human-to-human transmission. Third, four sick Turkish children were reported to have played with the heads of infected dead chickens prior to being hospitalized.

These situations are representative of the lifestyles of the people involved in these reported cases. Language and cultural barriers add dimensions of complexity as we try to get this situation under control. Nonetheless, it is very important to continue educating people in the international community on how to handle sick birds as well as practice safe handling practices for defeathering, slaughtering, and culling. The US Agency for International Development (USAID), along with other international partners, should continue to provide protective equipment during culling to decrease the interaction between diseased birds and humans. Furthermore, awareness still has to be raised about this disease and on how to reduce contact with infected birds and contaminated environments. An article on the reverse of this page highlights the situation in South Africa and reemphasizes our need to step up our efforts.

Sincerely,

Michael C. Burgess, M.I

Member of Congress

## Excerpt from the Mail & Guardian – an internet-based news publication in Africa, Bird flu ruffles few feathers among South Africa's street traders, February 22, 2006:

The man shrugs his shoulders and stares blankly at the Society for Protection against Cruelty to Animals (SPCA) officer when asked i he has ever heard of bird flu. Beside him, row upon row of chickens, pigeons and guinea fowl languish in filthy, cramped cages at the informal Kliptown market in Johannesburg, South Africa. To the side of the stacked pens, few shoppers notice the limp, sickly-looking chickens next to the neighbouring stalls with fresh fruit and vegetables for sale.

"We try to educate the traders about bird flu, but most of the chicken sellers are foreigners who don't speak English or any of the South African languages. So it is difficult, they don't understand what we are saying," explains the SPCA officer responsible for animal welfare at the large informal market, who asked to not to be named.

He added that many of the unlicensed markets around the country are in far worse condition when it comes to cleanliness, and that general awareness of the deadly H5N1 virus, and what preventative measures should be applied, is poor.

None of the half-dozen poultry vendors asked about bird flu know anything about the disease, or how it can infect humans. The market, at the heart of Soweto, is one of dozens that operate daily across Johannesburg, where battery-farm chickens deemed unfit for sale to supermarkets are offloaded.

Along with South Africa's large commercial poultry farms, these informal markets are considered high-risk areas by health officials of the watch for any outbreak of avian flu. That surveillance has taken on greater urgency with the arrival of the disease in Nigeria this month -- the first known African case.

United Nations bird-flu expert Fred Musisi says South Africa is internationally recognised as being "avian-influenza free" and has strict measures in place to maintain that status. "The outbreak [in Nigeria] poses no real threat to the country," comments the Food and Agriculture Organisation official.

However, he stressed that South Africans remain naive in terms of the disease, which has to be addressed for the country to contain a

potential outbreak of the virus effectively.

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"I think the South African government is in a better position than most African governments. They have a contingency plan and protocol for surveillance, and have gone through the exercises for managing an emergency," says Musisi.

"But what we also really need are public awareness campaigns and activities that really alert people to the dangers: poster, radio and television campaigns on the subject; [and] engaging with schools so that kids are made aware of the disease, so if they see a problem with a chicken at home they will tell someone."

He adds: "I know this might cause alarm among certain elements of the population, but it is better to get a false alarm on an animal than to get no feedback at all."

The SPCA's national manager of farm animals, Celeste Houseman, shares Musisi's concern over the lack of awareness of the disease.

Most rural people "haven't got a clue" when it comes to bird flu, she says. A media campaign is of paramount importance, as a cull of suspected poultry will be implemented immediately once the first infected bird is detected.

"We monitor the informal trading markets across the country, and if there is an outbreak of avian flu we will be at the forefront of the fight to contain it. The problem is the disease seems to spread so fast that containment will only be possible if everyone is aware of what to do," Houseman notes.

"We have been trying to contain an outbreak of swine fever in the Eastern Cape for the past few months. At this stage we have culled 200 000 pigs and the outbreak still hasn't abated," she says, highlighting the difficulties associated with containment.

SPCA officers who regularly monitor the markets say the recurring presence of another highly contagious poultry disease might prove helpful in combating an outbreak of bird flu, due to the similarities of both symptoms.

"Chicken sellers at the market are aware of Newcastle disease, which is fatal to chickens but not humans, and the symptoms are similar to avian flu. At the moment, when they recognise the Newcastle disease symptoms -- weight loss, excessive mucus and measles -- they just chop the heads off and sell them.

"But if we could get them to report animals with those symptoms, it would be a good start," says an SPCA official.